

California State University, Dominguez Hills

Teacher Quality Program

STEM Teachers in Advanced Residency

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California State University, Dominguez Hills – STEM Teachers in Advanced Residency

Competitive Preference Priority 1: Promoting STEM Education: (A) **High-quality**

preparation of STEM teachers. STEM Teachers in Advanced Residency, or STAR, will prepare highly qualified secondary science and math teachers for Los Angeles Unified School District (LAUSD). 1. Institutional collaboration: In California, applicants enter credential programs after a bachelor's, so participants will have already passed the same courses as any other STEM major. The College of Education and College of Natural and Behavioral Sciences have a history of collaborating to prepare highly qualified STEM teachers, e.g., Noyce Scholars, funded by National Science Foundation, receive scholarships while completing their STEM bachelor's and earn teaching credentials in the College of Education. 2. Hands-on inquiry-based STEM: a) CSUDH's teacher preparation courses, particularly methods courses, have been redesigned to include more instruction in hands-on, inquiry-based teaching, in keeping with Common Core State Standards and Next Generation Science Standards. b) Residents will be paired with master math or science teachers who are adept at creating inquiry-based STEM lessons. Participants will observe, co-teach and teach hands-on lessons. c) All residents will do an internship, e.g., engineering firm, research lab, to gain more applied knowledge. d) Residents will attend lab school (P. 25) as members of instructional teams that include lead teachers who are expert in STEM instruction. Participants will plan, observe, co-teach and teach project-based lessons. e) STAR will offer Google Certified Educator and Apple-Ready Educator technology certificates that verify teachers have learned how to integrate technology into lessons. Participants will receive explicit instruction in the interdisciplinary connections between learning sciences and STEM instruction via theory in coursework linked to pedagogical best practices and curriculum planning in lab school. 3. Field-based instructional experiences: a) Applicants will conduct 80 hours (vs. 40 for traditional program) of observations before being admitted. b) Residents will spend 4 mornings plus 1 full day/week in the fall semester and 5 days/week in the spring semester in a high-need school with a master teacher, growing from observing to teaching lessons to students at varying levels. c) Residents will join instructional teams in the lab school

for 80 hours in the summer plus 80 hours in the school year to observe, co-teach and teach STEM lessons to students at a range of proficiency levels. d) Educational psychology, classroom management & methods courses will be designed to completely align with field experiences. Residents will reflect on lab school and residency experiences in credential courses weekly.

(B) Groups underrepresented in STEM. CSUDH's diverse student body (e.g., 55% Latino, 18% African American) and recruiting strategies will result in large numbers of participants from groups traditionally underrepresented in STEM. E.g., our TQP 2009 program has produced 72 credentialed math-science teachers: 43% (31) Latino, 13% (9) African American, 46% (33) female. Of 287 participants in our 3 federal Transition to Teaching projects (2004, 2006, 2009), 182 became math-science teachers. Of that 182, 59% (107) were women, 54% (98) Latino, 13% (24) African American. CSUDH has a National Science Foundation Noyce Scholar grant for undergraduate STEM majors who will become teachers. Of the 20 recipients who have earned a credential to date, 80% (13) are women, 65% (13) Latino and 10% (2) African American.

CSUDH will use targeted recruiting strategies to reach STEM underrepresented groups: a) Members of previous cohorts from underrepresented groups will be spokespersons during recruiting events. b) Create videos featuring the spokespersons for use at information sessions and on website. c) Outreach to organizations, e.g., African American Male Alliance, with members from STEM underrepresented groups on CSUDH and other campuses; hold STAR events for their groups. d) Advertise in community newspapers (*The Sentinel*, *The Wave*) that reach partner school neighborhoods. e) Advertise in community centers, meeting places. f) Outreach to off-campus organizations with STEM underrepresented members via social media, open houses, presentations, mass emails. g) Outreach to organizations of STEM minorities, e.g., National Society of Black Engineers, Society of Hispanic Professional Engineers, Society of Women Engineers. h) Leverage Noyce Scholars, which includes a partnership with West Los Angeles College to recruit minority candidates and offer academic and financial support.

Competitive Preference Priority 2: Benchmarked, College- and Career-Ready Academic Standards (A) **Aligned with standards.** In 2012-13, California began implementing the

Common Core State Standards (CCSS), which are internationally benchmarked college- and career-ready standards. As of March 2014, 11 states including California had adopted the Next Generation Science Standards (NGSS), which are benchmarked using 10 countries whose students score well on international math and science assessments. California will begin the transition to NGSS in 2015-2016. To prepare teachers, in 2012-13 the CSUDH teacher preparation department began a multi-step process to revise its credential programs to achieve complete alignment with CCSS and NGSS. CSUDH chose to begin with the online single-subject (secondary) math and science teacher pathway by re-designing online modules. Second, the required pre-service clinical experiences for the online credential program were revised to require that candidates complete them at designated lab schools, whose curriculum is project-based, rooted in the CCSS, and directly connected to the credential curriculum. Also in 2012-13, the four methods courses for the single-subject credential program were modified to align with CCSS. In 2013-14, faculty attended training workshops planned by the CSU Chancellors Office re alignment of teacher preparation programs with the new standards. In 2014-15, the credential program faculty will achieve their goal of complete alignment with CCSS and NGSS.

(B) Translate standards into classroom practice. The depth and quantity of clinical experiences described in CPP 1 will enable residents to practice the standards so they become well-versed in designing and delivering standards-aligned lessons. The participants will be matched for their residency with a master teacher who teaches the Common Core or NGSS. The lab school master teachers will be experts in the new standards. The residents will design, observe, co-teach and teach standards-aligned lessons in their lab school instructional teams.

A. SIGNIFICANCE

(i) Build capacity to provide, improve, expand services that address needs of target pop

CSUDH is a four-year urban public institution in the city of Carson in Los Angeles County that enrolls 14,670 (fall 2013). CSUDH is among the most ethnically diverse universities in the U.S., and most students are first-generation college-goers. Fall 2013 enrollment was 54.5% Latino, 17.7% African American, 12.9% white, 11% Asian, 3.2% two or more races, 0.4%

Pacific Islander and 0.3% American Indian or Alaskan Native. CSUDH is a Minority-Serving Institution and Hispanic-Serving Institution. The vision of CSUDH's College of Education is to maintain a model of collaborative urban educational excellence, recognized for preparing teachers, administrators, counselors, and other specialists who work effectively with a variety of learners from diverse backgrounds, especially those living in poverty. CSUDH is accredited by the National Council for Accreditation of Teacher Education and the California Commission on Teacher Credentialing. CSUDH and LAUSD have had a long partnership in preparing highly qualified teachers for urban schools. Because most candidates enrolled in the CSUDH credential program will be teaching in urban schools with multicultural, multilingual students, coursework and field experiences are designed to address English learners and diverse learning styles.

In California, teaching credentials are earned after an undergraduate degree. CSUDH's credential program offers **multiple-subject (elementary)** and **single-subject (secondary)** programs. CSUDH offers the traditional student-teaching and university intern options. Interns are classroom teachers without a preliminary credential but who have fulfilled certain state and CSUDH requirements; they are supervised and supported for fieldwork in their own classrooms.

CSUDH is an **eligible** partner institution. **IA:** 100% of graduates have content knowledge. In California, candidates must pass the CSET test or subject-matter preparation program to demonstrate subject matter knowledge before entering a credential program. To earn a credential, 92% of CSUDH single-subject and multiple-subject graduates on average pass the state Performance Assessment for California Teachers. Over 4 yrs, 89% of multiple subject and special education candidates passed the state RICA test. **IIA:** Required to enter CSUDH teacher preparation program: 2.75 GPA in last 60 units, pass CBEST basic skills test, demonstrate subject-matter competence, complete 40 hours of observation. To stay in program: maintain B average (no grade lower than a C). Clinical experiences: University interns, 2 semesters of supervised field experience in own classrooms; 4 semesters for special education. Student teachers, 1 semester of supervised teaching in a master teacher's classroom. **IIIB:** All CSUDH teacher graduates are highly qualified: bachelor's degree, demonstrate subject-matter

competence, pass state certification. **iiC:** All early childhood educators prepared by CSUDH are highly qualified special education teachers who earn an added authorization.

This project will enhance and strengthen a residency pathway (Absolute Priority 2), created in 2009 via a TQP grant, that leads to a single-subject credential plus master's degree. The enhancements are based on lessons learned from the prior project: participants need larger stipends, more applied knowledge to support project-based learning, exposure to additional teaching styles, experience in school functions (e.g., department meetings), and more intensive clinical experiences. Also, teachers who earned their credential-master's through CSUDH and entered LAUSD's Beginning Teacher Support & Assistance (BTSA) induction program reported overlap between the credential program and BTSA. CSUDH needs to design and implement its own induction program that will build on, rather than repeat, the residency topics and skills.

LAUSD, the nation's second-largest district, is a high-need LEA that enrolls urban, low-income students. 2012 U.S. Census estimates show that the district has 232,786 students in poverty, or 31% of 752,855 (> 20% threshold). The district encompasses the city of Los Angeles and all or parts of 31 smaller municipalities plus unincorporated areas. The project will focus on 10 high-need middle and high schools in the southern area of LAUSD, where CSUDH is located. The table below shows the large percentages of low-income students of color enrolled in these schools, plus LAUSD demographics (Source: California Dept. of Education, Dataquest):

Target School Demographics

SCHOOL	Enroll	NSLP* 12-13	Latino	Afr Amer	Other**	Eng Lrn
Banning High	2,580	63%	95%	2%	4%	14%
Bell High	3,430	89%	98%	0%	2%	19%
Narbonne High	2,846	59%	62%	20%	18%	10%
South East High	2,293	86%	98%	1%	1%	19%
Washington Prep HS	1,336	86%	45%	52%	2%	16%
Bethune Middle	1,358	93%	86%	14%	1%	24%
Edison Middle	1,199	94%	97%	2%	1%	23%
Gage Middle	1,864	88%	99%	0%	1%	19%
Peary Middle	1,439	65%	64%	27%	9%	13%
White Middle	1,690	59%	64%	9%	27%	9%
Total/Avg	20,035	77%	83%	10%	7%	16%
LAUSD		75%	74%	9%	17%	26%

*Eligible for National School Lunch Program. **2 schools have sizable Filipino populations.

In 2012 (most recent ranking) eight of the 10 partner schools were in the lowest 10% or 20% of schools with their grade level statewide, one 30% and one 40%. The needs of LAUSD and our target schools are evident in achievement data (see table below). While **4-year graduation rates** for the class of 2013 are higher in partner schools vs. district, 20% to 25% of students drop out or fail to graduate on time. Proficiency on the 2013 **California Standards Tests** in math and high school science is woefully low, and not even half of grade 8 and 10 students were proficient in life science. In grade 10, students first take the **California High School Exit Exam**, which covers eighth-grade math; one of the schools was exceptionally low in 2013. California's grade 11 standardized tests include an **Early Assessment Program** math test to assess readiness for college math. Very few students are ready for college math, though many are conditionally ready, meaning that they need to continue to take Algebra II or higher math.

Student Achievement at Target Schools 2013

		2013 California Standards Tests % Proficient+			HS Exit Exam	EAP Math	
SCHOOL	4-Yr Grad	Math	HS Subj Sci	Life Sci gr 8 & 10	Math	Ready College	Conditional Ready
Banning High	75%	20%	15%	36%	77%	3%	89%
Bell High	77%	22%	29%	40%	83%	14%	72%
Narbonne High	76%	21%	24%	46%	85%	12%	73%
South East High	80%	12%	19%	40%	88%	2%	52%
Washington Prep	72%	7%	9%	19%	57%	6%	56%
LAUSD HS	68%	19%	30%	41%	78%	11%	65%
Bethune Middle		28%		39%			
Edison Middle		40%		45%			
Gage Middle		32%		48%			
Peary Middle		36%		52%			
White Middle		41%		49%			
LAUSD MS		42%		57%			

Source: California Department of Education, Dataquest

Consistent: In addition to alignment with Common Core and NGSS (see CPP 2), STAR is well-aligned with the goals that LAUSD is pursuing as one of eight Calif. districts granted the CORE (California Office of Reform Education) waiver from No Child Left Behind by the U.S.

Dept. of Education. For CORE, LAUSD identified schools for additional intervention, including seven of our 10 partner schools. STAR includes one “support” school (Banning High missed graduation rate target), three “focus” schools (Bell, Bethune and Narbonne for low-achieving subgroup) and three “priority” (highest need) schools (South East, Washington Prep and Gage). The three “priority” schools receive School Improvement Grants (SIG), meaning that they get federal Dept. of Education funds to turn around their persistently low achievement. Thus, STAR will support schools that LAUSD and the U.S. Dept. of Education are targeting for reform.

For LAUSD teacher needs, see **iii. shortages have been demonstrated** below.

CSUDH proposes STEM Teachers in Advanced Residency (STAR) to recruit, prepare, place and retain 105 highly qualified new math and science teachers in high-need middle (grades 6-8) and high schools (9-12) in LAUSD. The project enhances a third residency pathway for the preparation of urban teachers. This pathway, developed via a TQP grant in 2009, blends the rigor and theory of a master’s degree with the practice and pragmatism of the single-subject credential, combined with a year-long residency in a partner school and extensive, extra clinical experience in the lab school. Stipends will enable participants to do a residency and gradually assume teaching duties under the supervision of an expert teacher, rather than becoming a teacher of record with full duties after a summer of preparation, as in an internship. Residents will complete a single-subject credential in 12 mos., master’s in 15 mos. and be hired by LAUSD.

We believe the enhanced third pathway, with higher stipends, internships to acquire applied knowledge, exposure to more teaching styles, and clinical experiences in our innovative lab school, will attract additional qualified applicants to CSUDH who will be deeply committed to remain teaching in these high-need schools. The residency and the lab school will train math and science teachers specifically for the challenges of these high-need urban schools. Thus, the target schools will have a greater number of qualified math and science teachers, and achievement in math and science will improve. These benefits will continue long after the project period.

(ii) The likelihood that the proposed project will result in system change or improvement.

Creating lasting improvement in math-science instruction in high-poverty schools requires a

multifaceted approach, which STAR will do: 1) produce 105 highly qualified teachers with a deep theoretical understanding of teaching and commitment to high-need schools; 2) provide veteran teachers in high-need schools with training so they can be effective mentors and support providers for years to come; 3) through a professional learning community, develop skills in the use of data to improve achievement and create enduring peer support; 4) build teachers' capacity to improve their practice through lesson study and reflection; 5) create and sustain induction that is adapted to the needs of math and science teachers. 6) provide monthly in-depth Professional Development Academy workshops for new teachers and partner school teachers on critical topics in secondary math and science. 7) integrate best practices and residency strategies in CSUDH's teacher preparation programs. By intertwining these elements, STAR will build capacity in veteran and new teachers and create a sustainable system of support that will improve student achievement and serve as a model in LAUSD and urban school districts.

The project will strengthen a third pathway to a teaching credential, alongside student teaching and internship. In our high-need urban schools, the default path for the training of math and science teachers is the internship due to the immediate need and the low retention of teachers prepared in traditional student teaching. If STAR establishes the effectiveness of this enhanced third pathway through longitudinal data , it could influence teacher preparation in the state.

Also, CSUDH and other IHEs often place student teachers in successful suburban schools in the belief that high-need urban schools lack the capacity to provide a quality clinical experience. STAR will build the capacity to support excellent clinical experiences in partner schools, so student-teaching candidates will do student teaching and be hired there. This will provide a larger pipeline of high-quality teachers for urban schools to raise achievement.

STAR evaluation data will provide critical information on placement, retention, best practices, and student achievement, enabling a comparative evaluation of teachers prepared through the project and those who were not. This will inform the decisions regarding the most effective systems of teacher preparation.

(iii) Prepare personnel for fields in which shortages have been demonstrated.

The economic downturn that began in 2008 led to many teacher layoffs in LAUSD, with newer and not fully credentialed teachers laid off first. Yet, in 2011-12, LAUSD reported that only 93.8% of secondary math and 87.3% of secondary science classes were taught by highly qualified teachers, i.e., fully credentialed with content competence. As the table below shows, too many of the schools still have 5%+ of classes, particularly in science, taught by teachers who lack a credential or are not teaching their credential subject. (Source: California Dept of Ed.)

Classes Taught by Highly Qualified Teachers

SCHOOL	NCLB Core & Compliant Classes 2011-12	
	Math Classes	Science Classes
Banning High	100%	92%
Bell High	99%	92%
Narbonne High	95%	95%
South East High	99%	95%
Washington Prep High	97%	98%
Bethune Middle	100%	82%
Edison Middle	73%	72%
Gage Middle	91%	78%
Peary Middle	97%	95%
White Middle	100%	97%
LAUSD secondary	94%	87%

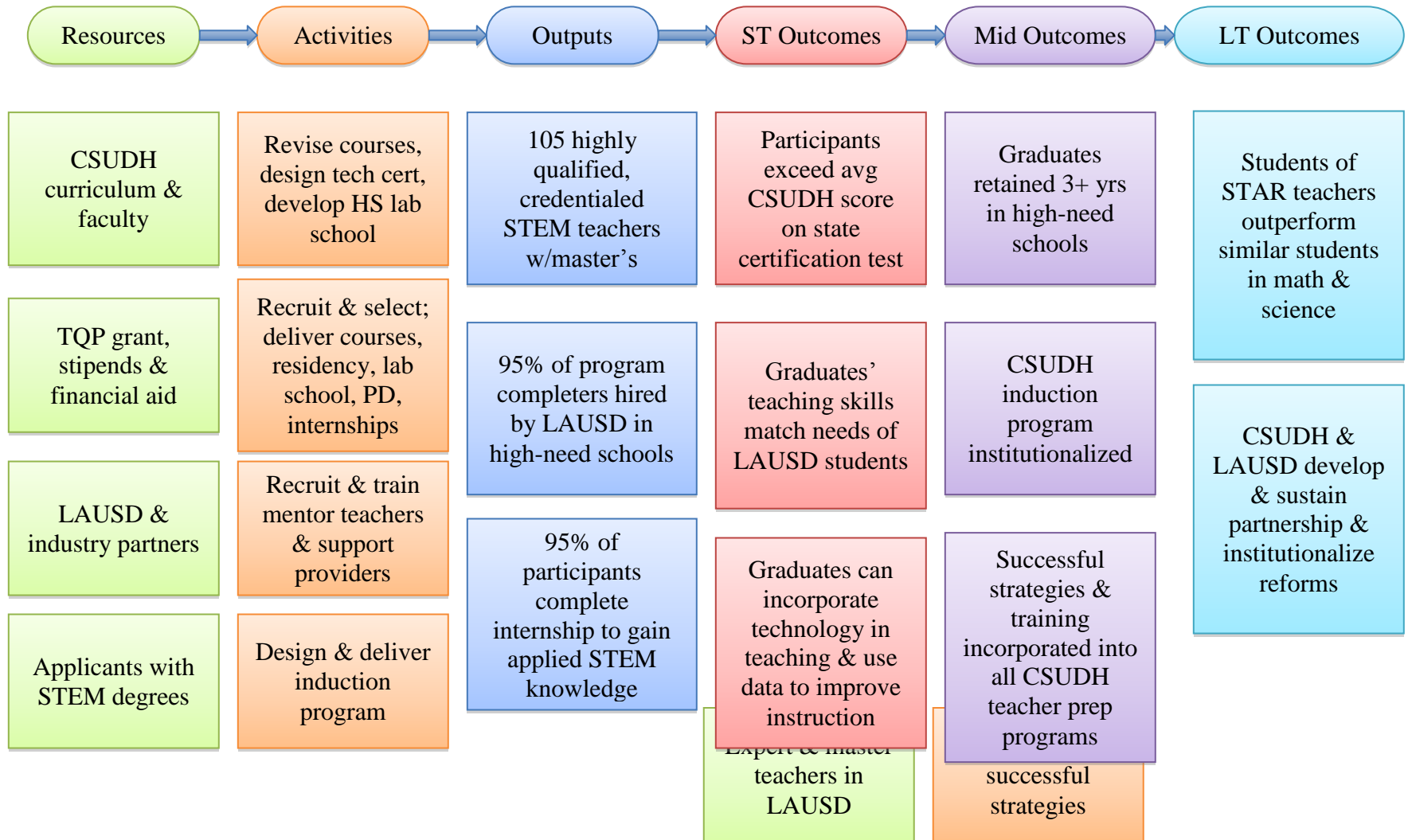
LAUSD Director of Certificated Workforce Management [REDACTED] provided the following projections for math-science teacher hiring. He indicated that highly qualified physics and chemistry teachers are particularly hard to find:

LAUSD Projected STEM Teacher Hires

	2014-2015	2015-2016	2016-2017
Foundational-Level Math	30	30	30
Mathematics	80	100	120
Biology	50	65	80
Chemistry	30	40	50
Geoscience	10	15	20
Foundational-Level Science	10	15	20
Physics	20	25	30
Total	230	290	350

Thus, our focus on math and science teachers meets an acute need for LAUSD.

B. QUALITY OF THE PROJECT DESIGN



(i) Proposed project is supported by strong theory (as defined in this notice).

In addition to the logic model, CSUDH's TQP 2009 has achieved strong results, which STAR will build on. Of 52 people in TQP 2009, 51, or 98% earned a credential. On California's PACT initial state certification, TQP outscored candidates in CSUDH's traditional program:

PACT Certification Pass Results

Year	TQP	Traditional
2011	100%	87%
2012	94%	80%
2013	100%	*
Overall	98%	83%

Also, 94% of TQP residents (49/52) completed one year of teaching, and in cohorts 1 and 2, 94% (30/32) were retained two years. Cohort 1, the only cohort that could have been retained for three years, was hampered by LAUSD's seniority-based layoffs (3,000 teachers laid off or displaced). In cohort 1, 12 of 16 (75%) were retained for 3 years. Three were displaced; two are seeking to reenter teaching. One had to quit teaching after two years to care for an ailing relative.

In cohort 1, 15 of 16 (94%) earned a master's in 2 years; in cohort 2, 12 of 16 (75%); and in cohort 3, 12 of 20 (60%). The percent with master's will increase as some take 2+ years.

In the new STAR design, residents will complete their master's in the summer before they begin teaching, rather than finishing the last two master's courses and the comprehensive exam as first-year teachers. To do this, three graduate courses will substitute for three credential courses, and nine credential credits program will count as master's elective credits.

(ii) Training of sufficient quality, intensity, duration to lead to improvements in practice.

The STAR training is detailed below in **iii. Coherent, sustained program.**

Quality: STAR is a well-planned model to produce highly qualified math and science teachers who hold master's degrees and are prepared for the complexities of teaching in urban schools. STAR is based on models for teacher residencies developed at the National-Louis University in Chicago and the Boston Teacher Residency. Residents in these programs had retention rates of 80% to 86% in their districts after three years. The two-year retention rate for

CSUDH TQP 2009 graduates is 94%. The Center for Teaching Quality analyzed the distinctive elements of a residency program, and our proposed project includes all (Berry et. al., 2008):

MODEL	STAR PROJECT
Tightly weave together education theory and classroom practice	Combines theory of rigorous master's coursework with increasing levels of practice in 1-yr program
Focus on residents learning alongside an experienced, trained mentor	Residents assigned to a trained mentor teacher who has full credential, tenure and 5+ years' experience
Group candidates in cohorts to cultivate PLC and foster collaboration	Cohorts meet monthly in professional learning community with mentors and support providers
Build effective partnerships among school districts, higher education institutions and nonprofit organizations	Partners include LAUSD, CSUDH, Troops to Teachers, EnCorps, Lawrence Hall of Science
Recruit and train teachers to meet specific school district needs	Addresses LAUSD's demonstrated need for secondary math and science teachers
Support residents once they are hired as teachers of record	New 2-year induction program; with experienced support provider; PLC, PD Academy
Establish and support differentiated career goals for experienced teachers	Opportunities to become mentors & support providers to sustain in schools after grant period

Our design aligns coursework, clinical preparation and induction to produce better-prepared teachers (Howey et al., 2006). Our other strategies have strong bases: 1) Lesson Study enables new teachers to develop skills for successful teaching and learning (Lewis, 2000; Choski and Fernandez, 2004). 2) Professional learning communities improve teachers' connections, commitment & gains in student achievement (Hord, 1997). 3) Web 2.0 online tools help teachers organize and manage their teaching tasks, engage students with varied learning styles, create multiple assessments for students with special needs, and collect and analyze data about student performance (Alexander 2006). 4) Video case studies in an interactive dialogue can be effective in supporting teachers to acquire best practices. (Lundberg et al, 1999; Perry & Talley, 2001; Cannings & Talley, 2002; Jimenez et al, 2006; Kurz, Baterelo & Middleton, 2009). 5) Cognitive coaching improves teachers' reflection, effectiveness & student test scores (Edwards, 2005).

The credential-master's coursework is blended, but does not sacrifice quality. The curriculum has been approved by the CSUDH College of Education and meets all requirements of the Calif. Commission on Teacher Credentialing. As discussed in CPP 2, courses have been or will be aligned with NGSS and Common Core. All courses will be taught by experienced CSUDH

faculty and expert practitioners, who incorporate the latest thinking, combine theory & practice, and balance fieldwork and instruction. STAR induction courses will increase quality by focusing on math and science, vs. LAUSD's general induction. Participants will receive guidance from mentors and support providers who will be well-trained to ensure their support aligns with courses & field experiences. The speakers for the PLC & PD Academy all are topic experts.

Intensity: Coursework will be rigorous, reiterative and framed by clinical experiences. Before joining STAR, applicants will conduct 80 hours of observation in high-need schools and the lab school in the spring to understand the challenges of urban schools. In the summer, they will conduct 80 more hours of observation and participation in the lab school. As residents in the fall, they will observe and participate in their mentors' classrooms and observe two other teachers 4 half days and 1 full day per week, increasing to 5 full days with their mentor in the spring. Their experience will intensify gradually from observation to teaching a full day of classes, monitored by their mentor. During the school year, residents and 1st-year teachers will participate in lab school every other Saturday (80 hrs/yr), optional for 2nd-year teachers. Residents will engage repeatedly in an intensive lesson study cycle of plan-teach-assess-reflect to enhance student achievement. Most mentor-resident pairs will stay together for 3 years. In 2-year induction, support providers will meet with new teachers at least 2x/week to provide ample support. They will attend the professional learning community—in-person and online monthly in the school year—which is sufficient to develop collaborative, long-term bonds. Also, new teachers and support providers will attend at least 5 in-depth PD Academy workshops/year.

The duration of the credential-master's pathway is 15 months:

15-Month Pathway to Credential and Master's

	Jn	Jl	Au	Se	Oc	No	De	Ja	Fe	Mr	Ap	My	Jn	Jl	Au
Summer courses															
Residency & courses															
Prelim cred													X		
Master's															X
Induction start															

The Summer Academy allows participants to complete prerequisite courses to establish the foundations of teaching before entering the residency. They remain in cohorts for three years. Two years of STAR induction will be sufficient to ensure that they earn their full credential.

(iii) Proposed activities constitute a coherent, sustained program of training in the field.

Purpose: STAR fulfills all the General Program and Absolute Priority 2 requirements while markedly enhancing a residency pathway that will produce more math and science teachers to meet the highest needs in our partner district and schools. Enhancements:

	TQP 2009	STAR
Duration	18 months for credential + master's	15 months for credential + master's
Recruitment	Academic majors or equivalent hours in math or science	• Academic majors in math or science. • Extra effort to recruit chemistry and physics majors. • Task force to recruit African Amer men
Stipend	██████	██████
Standards focus	California standards	Common Core and NGSS
Early Field Experiences	70 hours in summer at year-round school or in summer school	80 hours in spring in high-need schools & lab school, plus reflection
Residency	Two semesters with same mentor, four full days a week	2 semesters. Fall: 4 half days & 1 full day/wk w/mentor & observe 2 teachers. Spr: 5 days/wk w/mentor
Clinical Experience	In residency with mentor	• In residency with mentor • In lab school on instructional team, 80 hrs summer + 80 hrs school year
Internship	None	Two half days during fall semester
Professional Development	Professional learning community with cohort & mentors	• Professional learning community with cohort & mentors • Monthly PD Academy for STAR teachers, support providers & partner school teachers
Induction	LAUSD program	CSUDH program aligned w/STAR
Master's	Curriculum & instruction option	Choice of 3 options

STAR will enroll participants with bachelor's degrees in STEM and demonstrated subject-matter competency. Residents will complete rigorous coursework leading to a credential in 12 months and a master's 3 months later. Before they begin the residency, participants have 160 hours of observation and clinical experience so they know the challenges of high-need schools. The credential and master's coursework will be integrated with increasing levels of experience in

a one-year residency in a math or science classroom with a trained mentor teacher in a high-need school. Coursework and fieldwork will emphasize project-based learning and use of technology in the classroom. Cohorts of 35 residents will meet in twice monthly (once in person, once online) as a professional learning community with their mentors. The Professional Development Academy will offer monthly workshops on pertinent topics to new STAR teachers, support providers and partner school teachers. From pre-application observation through their first two years of teaching, residents will gain extensive, additional clinical experience in the innovative lab school as a member of an instructional team of veteran and novice teachers. There will be one middle and one high school lab school on a partner school campuses. After they receive their preliminary credentials each June, beginning teachers will be hired in high-need schools, join a two-year induction program and be assigned to a trained support provider (their mentor if hired in the same school). The induction program will enable them to earn their full professional credential after two years of teaching. As highly qualified, skilled teachers, they will improve achievement in high-need partner schools.

Timing: From Oct. 2014 to May 2015, STAR will recruit and select cohort 1, recruit and train mentors, and gain approval of new, blended credential-master's courses. Also, year 1 will include the development and approval of the induction courses and creation of two technology certificates. Cohort 1 will begin courses in June 2015 and residencies in August 2015. See table below for cohort progression. CSUDH will sustain induction for cohort 3 after the grant period.

Milestones and Progression of STAR Cohorts

	Summer Acad	Residency	Prelim Cred	MA	Induction Yr 1	Induction Yr 2	Full Cred
Yr 1	Cohort 1						
Yr 2	Cohort 2	Cohort 1	Cohort 1	Cohort 1			
Yr 3	Cohort 3	Cohort 2	Cohort 2	Cohort 2	Cohort 1		
Yr 4		Cohort 3	Cohort 3	Cohort 3	Cohort 2	Cohort 1	Cohort 1
Yr 5					Cohort 3	Cohort 2	Cohort 2
Yr 6						Cohort 3	Cohort 3

Project Design Connected to Impact: The project is designed to achieve four major outcomes.

The following narrative describes the objectives and activities connected with each goal:

Goal 1. CSUDH's STAR project will produce highly qualified math and science teachers with skills matched to the needs of students in the high-need LAUSD.

- a. Using a rigorous selection process, the project will recruit three cohorts of 35 qualified participants, for a total of 105 over the grant period.
- b. 95% of participants complete an internship to gain applied STEM knowledge
- b. 95% of program completers will attain initial certification by passing all necessary certification assessments.
- c. 90% of program completers will attain a master's within two years of beginning the program.
- d. 95% of program participants who were not scheduled to graduate in the previous reporting period will persist in the postsecondary program in the current reporting period.
- e. Participating CSUDH math and science teacher candidates will attain a 10% improvement over the average CSUDH score on the Performance Assessment for California Teachers (PACT), used for initial state certification of teachers, versus the baseline year 2013-14.
- f. 90% of candidates will pass assessments demonstrating that they are meeting the needs of English learners, students with special needs, and gifted students, as measured by Teacher Performance Expectation Nos. 5 (engaging all students) and 7 (teaching English learners); Performance Assessment for California Teachers (PACT) academic language rubrics 11 and 12 (English learners and literacy).
- g. In an annual project survey, 90% of principals who supervise participating first-year teachers will agree that they can 1) integrate technology effectively into curricula and instruction and 2) use technology effectively to collect, manage and analyze data to improve teaching and student achievement.

Goal 1 Activities:

Recruitment and Selection: Approximately 250 people per year inquire about secondary teaching who meet the qualifications, so we are confident that we can recruit 35 candidates per year for STAR. We will recruit:

- Career-changing professionals with content knowledge and STEM work experience

- Recent college graduates (last three years) who have strong academic backgrounds and academic majors in STEM and can prove subject matter competence.

Recruiting Strategies: We will use strategies that have been successful in TQP and Transition to Teaching. Recent graduates and career changers with math, science, engineering, computer science or technology degrees will be recruited via a) print and online ads. b) job fairs. c) print and electronic publications at CSUDH and other colleges. d) campus-based organizations. e) informational meetings and presentations at colleges in math and science classes. f) CSUDH and other alumni publications. All ads will include the URL for the project's web page, which will also be a link on the web pages of the College of Education and LAUSD. To address LAUSD's need in chemistry and physics, STAR will use a new partnership with West L.A. College to identify chemistry and physics majors, cohort them for support, and help them transfer to CSUDH to complete their degrees, possibly as Noyce scholars, to become teachers. Noyce Scholars are a subgroup of recent graduates. Noyce Scholars receive scholarships funded by the National Science Foundation for their junior and senior years as they complete their degrees. Noyce Scholars' teaching obligations align with the STAR requirement. Over 5 years of STAR, Noyce will produce about 35 graduates who can choose STAR to earn their credential. Also, STAR will integrate recruitment with LAUSD, and CSUDH will streamline STAR admissions.

Underrepresented Groups: Our recruiting strategies will result in 60% to 70% of STAR teachers being Latino or African American, which matches well with LAUSD, where 84% of students are of these ethnicities. This is based on the recruiting success of TQP 2009 (56% of 72 African American + Latino) and Transition to Teaching STEM graduates (67% of 182 African American + Latino). Respectively, TQP and TTT STEM cohorts were 46% and 59% female. CSUDH has always struggled in recruiting African American males into our STEM teaching programs. Through STAR, we will assemble a taskforce of university and community leaders and others to develop a plan with strategies to recruit African American men.

Criteria: STAR has established rigorous application criteria: A) bachelor's from an accredited university. B) overall undergraduate GPA of at least 3.0, or 2.75 in the last 60 units.

C) subject matter competence: pass California Subject Examination for Teachers (CSET). D) score in the top 75% of TargetSuccess online survey that is aligned with the California Standards for the Teaching Profession and screens out the bottom 25% of applicants. E) proof of writing skills and commitment to the program via essay. 4) personal interview to assess oral communication and aptitude for urban teaching. F) other basic California tests and clearances. G) 80 hours of observation in classrooms in high-need schools and the lab school to learn about urban teaching.

Through our experience, we have learned that otherwise qualified candidates often need assistance in preparing for CSET and in navigating the process so they do not encounter discouraging roadblocks. STAR will offer preparation for the CSET test, funded by MSTI, a state grant. This support will increase the yield of STAR applicants from the pool of inquiries.

Selection: Our thorough process will ensure that applicants are well-qualified and aware of the obligation to teach for three years in a high-need school. They will attend a mandatory information session, plus lab school to reflect on their 80 hours of classroom observation. They will interview with the selection committee, composed of the STAR director, STAR staff, LAUSD human resources staff, and CSUDH faculty. The 30-minute interviews will use the nationally recognized Star Teacher Selection Interview that reflects Martin Haberman's research-based model for identifying teachers, particularly those who will teach at-risk or low-income students. The committee will ensure that applicants understand their obligations to teach for three years in a high-need school in LAUSD. Because district HR staff are on the selection committee, applicants will not have to interview again with the district pre hiring. Applicants will submit an essay about why they want to join STAR, stipend request, university applications and other documents. The selection committee will determine who will be admitted, conditioned on attending a mandatory STAR orientation session and other requirements.

Stipends, Teaching Obligation and Repayment: STAR participants will apply for and receive [REDACTED] stipends over 12 months. In TQP 2009, we found that [REDACTED] was insufficient for residents in high-cost Los Angeles. Participants will receive the financial support in monthly

installments during the residency. Those who receive stipends will sign an agreement that contains all the provisions in Absolute Priority 2 (c)(3), which includes the commitment to teach for three years in a high-need school immediately after the residency.

Tracking: The STAR office will track hiring and monitor placement to ensure that participants teach for three years in a high-need school. We ask that STAR teachers remain in the same high-need school to fulfill their commitment. During the first year of teaching, they will be in STAR induction classes weekly and will attend PLC meetings, allowing STAR staff to learn immediately if there are any problems. We will require residents to provide written proof of employment from the district at the start and end of each school year.

Repayment: Consistent with Absolute Priority 2 2(d), the agreement will state that those failing to complete the complete the credential, master's or teaching requirements will repay the stipend, pro rata, unless the STAR partners approve the participant's request to consider extraordinary circumstances. Any returned funds will be used for STAR activities.

Other Financial Assistance: STAR participants will be eligible for up to [REDACTED] per year from the federal TEACH grant program, which in exchange requires four years of service in high-needs schools, and thus is a good option for STAR participants. CSUDH's financial aid office will provide participants with workshops on financial aid at orientation and meetings.

Redesign Coursework: To create an accelerated, blended program for the preliminary credential and master's, CSUDH is integrating four credential courses into graduate courses. Integration will allow residents to complete credential and master's courses before they begin teaching, eliminate redundancies between the two programs, and engage residents in mostly graduate-level courses that offer more content depth and propel them to become teacher leaders. Also, STAR will create four new courses for induction. These courses will provide a more intensive, comprehensive induction, and will reflect the context of secondary math and science teaching. All the new classes will be approved in spring 2015 by the University Curriculum Committee. Also, STAR will create two optional technology certificates that will enable teachers to learn to integrate Google and Apple applications into curriculum.

Preprogram Activities – Spring Semester: Applicants to STAR will conduct 80 hours of classroom observations and participation: 40 hours at the lab school (8 Saturdays x 5 hours) and 40 hours at high-need LAUSD secondary schools Monday–Friday (avg of 4 hours/wk x 10 wks). Applicants will be observed and evaluated by lead teachers and STAR team to assess their performance and determine if the STAR pathway is appropriate for them. Also, applicants will attend mandatory monthly seminars, application workshop and financial aid workshops. They will be invited to monthly PD Academy workshops.

Coursework by Semester (Courses numbered in the 500s are graduate-level.)

Summer Academy: Residents will complete prerequisites (table below) to establish the theoretical foundations of teaching in diverse urban schools. They will spend an additional 80 hours in the summer observing and participating in the lab school, from 8:00 a.m. to 1:00 p.m. for four weeks. Coursework is in the evening, four days a week and online for 10 weeks.

Summer Semester No. 1			
Summer Academy: <i>theoretical foundations of teaching and learning in diverse urban schools</i>			
GED 501: Seminar in Lrning and Devel	3	Online and 2 Saturdays (9:00-12:00)	June-Aug
GED 503: Socio-Cultural Issues in Ed.	3	M/10 wks/4:30 – 8:30 pm & online	June-Aug
TED 400: Intro. to Education	3	T/10 wks/4:30 – 8:30 pm & online	June-Aug
TED 411: Secondary Classroom Management & Healthy Environments	3	W/10 wks/4:30 – 8:30 pm & online	June-Aug
Mul 520: Teaching English to Speakers of Other Languages	3	Th/10 wks/4:00 – 8:30 pm & online	June-Aug
Total registered units, Summer 2015: 15 units			

Fall Semester: Coursework will enhance classroom experiences, giving residents the skills they need to move from observing to co-teaching a lesson by the end of the semester. Mon–Thu, residents will be in the classroom for a half day, and all day on Friday. Two afternoons they will attend courses on an LAUSD campus, and two they will go to their internships. Weekly after school, residents will meet in the residency seminar (TED 453). Meetings of the professional learning community (once per month in person, once online) will count as seminar meetings. In seminar, residents will: 1) discuss their classroom experiences; 2) learn and practice Lesson Study; 3) collaboratively analyze each others’ teaching videotapes; and 4) share and edit an essay

about their experiences that is aligned to the Teacher Performance Expectations. Courses will be co-taught by CSUDH faculty with district content specialists.

The credential methods courses, TED 467 (fall) and TED 468 (spring), are aligned with master's course CUR 516, Seminar in Curriculum Development. E.g., In TED 467 and 468, residents will be introduced to project-based learning, and in CUR 516, in math and science teams, they will develop project-based units. Also, in TED 467 and 468 they will construct lessons based on Common Core and NGSS, while in CUR 516 they will analyze curriculum through the lens of Common Core and NGSS.

Fall Semester No. 1			
GED 500: Research Methods In Educ	3	Completely Online	Aug-Dec
CUR 510: Process of Curriculum Devel	3	M/15 wks/ 1:00 - 3:45 pm	Aug-Dec
TED 406: Teaching Secondary Reading	3	M/15 wks/ 4:00 - 6:45 pm	Aug-Dec
TED 467: Secondary Teach Methods I Math&Sci	3	W/15 wks/ 4:00 - 6:45 pm	Sep-Dec
TED 453: STAR Residency & Seminar I	3	W/15 wks/ 1:00 - 3:45 pm	Sep-Dec
Total registered units, Fall 2015: 15 units			

Spring Semester Residents will complete their credential coursework by delving more deeply into science and math curriculum development, content literacy and teaching methods. The 400-level courses will be co-taught with district partners. In May, residents will qualify for their credential by passing the Performance Assessment for California Teachers (PACT). This is a summative assessment that requires credential candidates to *plan* a series of integrated lessons, video tape their *instruction*, *assess* and analyze student work, and *reflect* on their teaching.

Spring Semester No. 1			
TED 453: STAR Residency & Seminar II	6	M/13 wks/ 4:30-6:30 pm	Jan-Apr
TED 468: Secondary Teach Methods II Math&Sci	3	W/10 wks/ 4:30-8:30 pm	Jan-Mar
TED 488: Teaching Event: Special Subject	2	M/7 wks/ 4:30-8:30 pm	Apr-May
GED 595: Action Research Project	3	W/10 wks/ 4:30-8:30 pm	Mar-Jun
Total registered units Spring 2016: 14 units			

Mentor Selection and Training: Each resident will be paired with a mentor teacher from a partner school so they can learn about teaching one-on-one. We anticipate that most mentor-resident pairings will stay intact for three years as the residents are hired as beginning teachers in

the same urban schools where they were interns. Mentors will become support providers during induction. STAR will recruit a group of new mentors each year, which will result in more teachers at the partner schools receiving training and increasing skills through STAR, which will have a positive impact on the school. Mentors will receive a [REDACTED] stipend.

Mentors must have a full credential in math or science, 5+ years' teaching experience and tenure. The mentor will be nominated by the principal, interviewed by a CSUDH-LAUDS team, and observed teaching to ensure that the mentor is an effective teacher and a collaborative, supportive colleague. The recommendation form, analysis of lesson plan, observation protocol and interview protocol are aligned with the selection criteria for mentor teachers. The principal's recommendation form will cover the prospective mentor's ability to collaborate with colleagues to improve instruction and ability to analyze gains in student learning. The observation will require a lesson plan to show ability to plan and prepare, use of strategies to diagnose pre instruction, monitor learning and assess after instruction, use of appropriate pedagogical strategies, and strategies to engage and support students with different learning styles. The observation protocol will measure engaging all students, making content accessible to all, monitoring students, classroom management, pedagogical skills and teaching skills that are particular to math or science. In the interview, we will use the TargetSuccess-TargetSketch teacher and mentor online selection instruments. The attributes rated include classroom community, differentiated instruction, accountability for student learning and more.

Mentors will begin training in fall 2014 prior to the residency in fall 2015. Mentors will learn 1) scope and sequence of the residency and coursework so that what residents are learning in their coursework, lab school and PLC is echoed in the observation, tutoring, co-teaching and practice-teaching in mentors' classrooms. 2) strategies (table below) to assist the residents in developing into reflective practitioners and teacher leaders.

Mentor Training Schedule 40 Hours Total			
Topic	Hours	Trainer	Timeline
Scope and Sequence of STAR	2	Kamal Hamdan	Fall Year 1
Cognitive Coaching	10	John Matich	Fall & Spring Year 1

Mentor Training Schedule 40 Hours Total			
Topic	Hours	Trainer	Timeline
Adult Learning Theory	3	Jeff Sapp & Jill Aguilar	Fall & Spring Year 1
Co-Teaching	3	John Davis	Spring Year 1
Lesson Study	10	Cecilia Duenas	Fall & Spring Year 1
Project Based Learning	6	J Borden, R Hernandez	Spring Year 1
Technology	6	Omar Caputo	Fall & Spring Year 1
Training will be repeated each year for current and new mentors. Additional professional development occurs during the residency in the Professional Learning Community, Professional Development Academy, Technology Certificates, and lab school. Mentors may have expertise in some training areas; they will not attend the trainings in areas in which they are experts.			

Mentor teachers will have responsibilities to A) design classroom experiences for residents in collaboration with STAR staff; some may co-teach lesson study. B) guide and support residents using cognitive coaching. C) become a support provider if the resident is hired in the same school. D) attend the STAR professional learning community. E) participate in lab school when appropriate. F) lead PD Academy workshops on topics in which they are experts. E) Two mentor teachers, one math and one science, from LAUSD may be released 50% to provide on-site support to residents and be liaisons to the STAR project.

Residency: Residency begins when teachers report to partner schools in early August, and ends when the school year does in June. Residents will attend prep meetings and experience activities as the school year starts. Residents will be in the school 4 mornings and all day Friday in the fall, and 5 days a week in the spring. With their mentors, they will attend faculty and department meetings, parent conferences, professional development, etc. Residents observe in their mentor's and two master teachers' classrooms to gain exposure to different teaching styles. They will tutor individuals and small groups and review student work. They will observe types of instruction: establishing community, sheltered instruction for English learners in math or science, differentiated instruction, literacy in the content areas, and technology to teach content. Residents will use the Guiding Questions aligned to the Performance Assessment for California Teachers to analyze their observations. Residents will shadow 3 students: 1) English learner; 2) student with special needs; 3) at-risk student (poor attendance, achievement, conduct).

Lesson Study: Mentors and lab school lead teachers will be trained in Lesson Study in year

1, and residents with their mentors will be trained during the summer in the lab school. Lesson Study will enable residents to collaboratively reflect and improve teaching practice. In weekly seminars, residents will use Lesson Study to discuss classroom observations. When they begin teaching in their mentors' classrooms later in the semester, 10 minutes of the lesson will be videotaped for review using Lesson Study. We will use this approach in spring for peer review of residents' 20-min. teaching videos, plus the 20-min. video for culminating teaching events.

Fall: Under mentors' guidance, residents will prepare lessons and teach a class, followed by feedback from the mentor. By week 8, residents will teach and videotape a 10-minute sequence for review using Lesson Study. By week 12, residents and mentors will be co-teaching one class. From weeks 15 to 18, the end of the semester, residents will assume responsibility for instruction in one class. Residents will maintain a journal in which they reflect on their experiences. They will 1) describe the experience (students, content, process, product); 2) explain what they should to re-teach and why; and 3) describe what they would do the same and differently and why.

Spring: Residents will assume more teaching responsibility. They will add a class at a time until they take over all classes, with support from their mentor, to prepare them for becoming teachers of record. Residents will be observed and evaluated by a CSUDH supervisor and mentor as they perform tasks aligned with the state educator prep standards: 1) Analyze students' work using evaluation rubric; 2) Create and teach reading/writing lesson plan in content area based on analysis; 3) Conduct language proficiency assessment, create sheltered lesson plan, teach to plan; 4) Pre-assess, create differentiated lesson plan, teach to plan; 5) Diagnose students, create unit plan, teach related lesson, assess learning; 6) Create a lesson and teach it using technology.

Faculty supervision: The residency coordinator will observe classrooms and gather evidence of how the residents and mentors are interacting, collaborating, and co-teaching. After each observation, the coordinator will talk informally to mentor and resident. The coordinator will regularly communicate with mentors via email and will meet in person with principals. Mentors will submit an online progress report for each resident twice a semester to the coordinator and STAR team. If there are concerns, the coordinator will meet one-on-one with mentors and

residents. Residents will enroll in TED 453, Student Teaching Seminar, taught by the coordinator, who will monitor their progress through their perspective on their residency.

CSUDH faculty assigned to STAR will be released from other responsibilities and will receive credits for reassigned time to carry out their duties for the STAR project. Typically, 25% participation in STAR is equivalent to 3 semester credits (or units), which is 25% of a full load of 12 credits. Faculty members assigned to STAR for 3 semesters will receive re-assigned time.

Lab School: Lab school will develop teacher-leaders who will have broad impact as soon as they begin teaching. Lab school will provide “extensive and intensely supervised clinical work integrated with course work using pedagogies linking theory and practice” (Darling-Hammond, 2006). In lab school, residents will apply theory from their recent classes through extensive fieldwork with students at varying levels of proficiency, as members of an instructional team that models good teaching. STAR will have two lab schools at partner schools: Gage Middle and Bell High, 1.9 miles apart. The Gage lab school exists, and STAR will create the Bell lab school. Lab school will have multiple benefits: providing extensive field experiences for residents, improving teaching practice of veteran and novice teachers, and increasing student proficiency.

Schedule: In summer, lab school will meet for 4 weeks Mon.–Thurs., 8 a.m. to 1 p.m. (80 hrs). During the school year, lab school will meet every other Saturday, 8 a.m. to 1 p.m. (80 hrs.)

Instructional Teams will each include 1 mentor teacher, 1 CSUDH faculty, STAR residents and novice (1st- or 2nd-year) teachers, including STAR graduates, from partner schools.

Participation: All residents must attend lab school in summer, fall and spring semesters. STAR graduates must attend during their first year of teaching as part of induction and may opt to attend in their second induction year. Lab school lead teachers will meet the same selection requirements as mentors. Also attending will be the STAR project director, coordinators and staff, plus CSUDH faculty and a team from LAUSD. STAR will bring in professionals to make presentations or demonstrations related to student projects, e.g., science of rockets.

Students: STAR and LAUSD will recruit 500 students (250 middle, 250 high school) grades 6-12. Each instructional team will work with 30 students. Lab school has been very popular with

parents and students seeking enrichment and increases in student achievement.

Ideally, 75% of students in lab school will have scored in the lower levels on standardized tests in math, and 25% at higher levels. This mix will expose residents and teachers to all levels of students, particularly because they will teach many low-scoring students in high-need schools. Students will include English learners, students with disabilities, at-risk, and gifted students. The lab school can form groups of one level or mixed groups for varied teaching experiences.

Approach: The schedule provides enough time to deliver full lessons, reflect, modify and reteach. Instructional teams will use the lesson study approach. Lab school lead teachers, who are trained in lesson study, will provide structured, collegial mentoring. The steps of lesson study are write lesson; design evaluation; observe, teach, or co-teach lesson with a mentor; collect evidence and assessments; debrief and revise; reteach; debrief and revise. At first, lead teachers will teach lessons while residents observe. As residents gain skills, they will co-teach and then teach the lessons they have created in their coursework. They will examine student work with the team; reflect on what worked and did not and why; analyze what students did or did not learn; and identify challenges. The teams will modify lessons and teach them to different groups of students. This approach differs from typical methods classes in which participants develop lessons and talk about how to adapt them but never teach the lessons with students.

Lab school will emphasize the development of project-based lessons aligned with Common Core and NGSS standards. Students may, e.g., build solar ovens, construct rockets. Each semester will culminate in a fair in which the students will showcase their projects in themes including health, engineering, energy.

Parents: Residents will practice working with parents in lab school through simulated and actual parent-teacher conferences. Also, lab school will include parent workshops on topics such as standardized tests, homework strategies, college preparation, etc. These opportunities are not available in traditional teacher prep programs.

The lab school will be a hub for teacher-leader development, leadership development, professional development for all teachers and administrators, and information dissemination for

parents, students, and other community members.

Internships: In TQP 2009, our residents learned content and pedagogy but were lacking in applied knowledge, e.g., the technology and engineering aspects of STEM that have become more prominent in Common Core and NGSS. To broaden their applied knowledge and assist them in developing project-based learning, STAR will identify an internship for each resident. In fall semester, residents will spend two afternoons per week, Tuesday and Thursday, at their internships. The internship may be research on campus with faculty from the College of Natural and Behavioral Sciences, research labs, engineering firms, etc.

CSUDH has experience in securing internships through our Master Teacher Fellowship project, funded by a National Science Foundation grant. MTF Fellows are required to do at least one internship, and the MTF team has assisted 30 fellows in securing internships. We will use the same approach and contacts as with MTF to identify internships for STAR residents. We will also collaborate with College of Natural and Behavioral Sciences faculty, especially those who are conducting STEM research, to identify internship opportunities.

Professional Learning Community: The STAR PLC meetings will be mandatory monthly meetings for all residents and their mentors, plus first-year STAR teachers and their support providers. In the first year, the PLC will include residents, mentors and site administrators in the partner schools. As residents become teachers, we will also create a first-year induction track in the PLC. The STAR PLC will reflect best practices in PLCs: 1) supportive and shared leadership, 2) collective creativity, 3) shared values and visions, 4) supportive conditions, and 5) shared personal practice (Hord, 1997). Two key barriers often affect the development of a PLC: time set aside, and the ability to develop a shared collaborative environment. STAR will directly address timing by scheduling mandatory monthly in-person meetings Aug.–May, at a scheduled time after school at the central location where STAR classes are held. The different tracks will meet on different days after school. Mandatory asynchronous online PLC meetings will be scheduled two weeks after the in-person meetings. To ensure collaboration, mentors will be chosen for their ability to collaborate, and the PLC coordinator will establish strategies that will

foster open, collaborative dialogue, such as the ATLAS protocol to look at student work.

Each in-person meeting will feature a speaker on a topic that is matched to what the residents or new teachers are doing in coursework and teaching. The PLC's third presentation will be on using data to improve instruction, which will be an overarching theme of the PLC.

PLC Schedule for Residents			
Mo.	Topic	Presenter	Expertise
Aug.	Context of Teaching: Lesson Study Residency Experiences	Cecilia Duenas, teaching and learning coord., LAUSD. James Borden, expert teacher & trainer, LAUSD. Facilitated by Jeff Sapp	STEM education, project-based learning & Lesson Study
Sep.	Building a PLC	Jeff Sapp, professor CSUDH	motivation & learning, social-cultural issues
Oct.	Using Data to Improve Instruction	Francine Avila and Ruben Hernandez, instructional coaches	STEM education, project-based learning & use of data to improve student achievement
Nov.	Cognitive Coaching	John Matich, director of professional development. L.A. Education Partnership	support programs for beginning teachers & Cognitive Coaching
Dec.	Preparing for an IEP	Kate Esposito, professor CSUDH	special education
Jan.	Classroom Management	Panel of mentor teachers	classroom management in secondary schools
Feb.	Web 2.0 technology	Omar Caputo, technology integr. specialist, CSUDH	integrating technology into education
Mar.	Integrating Technology in Teaching & Learning	Omar Caputo, technology integr. specialist, CSUDH	integrating technology into education
Apr.	Trash For Teaching	Craig Sipes & Jeffery Payton, LAUSD	STEM project-based learning
May	Project Based Learning	Ruben Hernandez, instructional coach	project-based learning

Professional Development Academy: We created the PD Academy as an enhancement to the TQP 2009 design because as they moved into teaching, participants asked for more in-depth information about classroom management, integrating technology into teaching, students with special needs and more. The PD Academy will offer monthly workshops covering a variety of topics, either topics not covered in the PLC or similar topics in greater depth. Residents will not

be required to attend the PD Academy, but will be encouraged to go. First- and second-year STAR teachers will be required to attend two workshops in the fall and three in the spring, based on their needs and interests. Other teachers from partner schools will be invited to attend along with STAR mentors and support providers. The PD Academy will expand the impact of STAR by involving other teachers from partner schools.

Targeted Strategies: STAR will employ overarching strategies that target certain needs of students in the partner schools.

Technology Certificates: STAR will create two optional technology certificates: Google Certified Educator and Apple-Ready Educator. Google Certified Educator is a five-week certification process: 1) Gmail, Drive, Calendar, test; 2) Documents; Spreadsheets, Presentations, Forms, test; 3) Moderator, Books, test; 4) YouTube, Sites; 5) Final Project “Classroom.” STAR residents and teachers will become experts in how to integrate the Google suite of applications in their classrooms and beyond. The Apple-Ready Educator certificate also requires five weeks of training: 1) Hardware Troubleshooting & Understanding, test; 2) iLife: iPhoto, iTunes, iMovie, test; 3) iWork: Pages, Numbers, Keynote, test; 4) iTunes U, iBooks, test; 5) Final Project “Classroom.” STAR residents and teachers will be experts in how to create a curriculum around Apple’s suite of applications. These technology certificates will be available in all CSUDH teacher preparation programs and to other LAUSD teachers.

Students With Disabilities: Residents will develop a strong knowledge base to address the needs of students with disabilities. At lab school, they will 1) Observe varied SPED instructional settings; 2) Participate in “mock IEP” meetings; 3) Review IEPs with lead teachers and practice effective teaching; 4) Receive support from SPED expert. In revised courses, they will 1) Attend seminars on SPED law, specific disabilities, instructional practices and IEPs; 2) Complete an in-depth case study by observing a student with disabilities in lab school and connect to student’s IEP; 3) Examine issues of fairness from the lens of SPED student; 4) Learn effective teaching practices for students with disabilities; 5) Learn principles of effective differentiated instruction and lesson design, especially SDAIE; 6) Create units of instruction to demonstrate understanding

of pedagogical practices that support learning & provide appropriate accommodations.

English Learners: STAR seeks to improve the preparation of teacher candidates in curricula, instructional strategies, and assessment for English learners that are aligned with the Common Core standards and English Language Proficiency Standards. The appropriate CSUDH College of Education faculty will receive training in language development strategies, curriculum and instruction, and assessment methodologies and then will work together as teams to integrate these methodologies into the credential, master's and induction courses. TED 467 Science and Math Content Methods and TED 468 General Secondary Methods will be modified to incorporate current best practice in second-language instruction in the content areas. TED 407 English Learning will be updated, and an online module will be developed. For induction, TED 551, Supportive Learning Environments, will emphasize English learner strategies, and TED 553 Curriculum Planning, Implementation & Assessment, will focus on using data about English Learners to improve instruction. Main topics for faculty, mentors and support providers will be 1) integrating language development with content instruction; 2) how language is used in math or science and how texts in those subject are written; 3) designing sheltered instruction that combines content and language development; 4) modifying assessments so ELs can demonstrate understanding of content, and using multiple measures of students' understanding (Short & Fitzsimmons, 2006). STAR will prepare only general education teachers, not SPED teachers.

Technology: STAR residents will see technology integration modeled in their coursework and lab school. They will use it in the schools to which they are assigned, and they will communicate using web 2.0 technology in the PLC. Particular attention will be given to technology applications for English learners and students with special needs.

Training: The coordinator of technology will train the College of Education faculty and lab school lead teachers (during year 1), mentors (during mentor training), and support providers (prior to induction) to incorporate the tools of web 2.0, e.g., podcasts, blogs, wikis, VoiceThread, Vokis, Toondoo, Wordle, Flickr, and simulation tools, with a focus on online science simulations and math applications so they can increase their use of web 2.0 online tools in curriculum and

instruction. Also, the coordinator will work with College of Education faculty to create websites that demonstrate the technological applications in all of the STAR coursework. This will continue through the project.

Tools: The coordinator of technology will set up the online component for the PLC in year 2 when the residency and PLC begin. Prior to the residency, the coordinator of technology and the coordinator of *TaskStream* will develop an *esupervision* protocol. In this procedure, the resident videotapes a lesson and posts it on *Taskstream*. The resident, mentor and CSUDH supervisor review it and participate in a synchronous online dialogue using guiding questions. The video is archived so it can be reviewed for verification of what occurred. This is more complete and accurate than an observational script from an in-classroom observation.

Video case database: STAR will use video cases of exemplary teaching for discussion in the PLC. Annenberg Media has a large video collection of lessons online that demonstrate high-quality, constructivist, and inquiry-based instruction that reflect research-based principles of effective learning. Beginning in year 2 and continuing through the project, STAR staff will review, annotate and index the most applicable video cases in a searchable database for participants, drawing also from collections such as InTime (University of Northern Iowa), PT3 Best Practices videos (Arizona State), and others. Videos created by STAR residents, mentors, support providers, faculty, etc., will be added to the database throughout the project (iTunes U).

Goal 2. Residents completing STAR will be hired & remain as teachers in high-need schools

- a. 95% of program completers will be hired by LAUSD in high-need schools each year.
- b. 95% of beginning teachers will be retained in teaching in the partner high-need LAUSD one year after being hired by the LEA.
- c. 90% of beginning teachers developed by the project will be retained in teaching in the high-need LAUSD three years after being hired.

Goal 2 Activities

Placement in High-Needs Schools: Placement will begin in May and will be finalized by the end of June. Starting early will allow the residents to observe their potential mentors before they

start their residency in the fall. The residency will help participants and school personnel know each other well, which will ensure good hiring decisions and increase retention. Most residents will be hired in the high-need school where they do their residency, which will maintain the mentor-resident pairing into induction. STAR staff will collaborate with LAUSD HR staff and principals and will work with candidates to ensure a smooth hiring process.

Selection & Training of Support Providers: If residents are hired in the same schools, their mentor will become their induction support provider. If they are hired in a different partner school without available STAR support providers, we will select them using the same criteria as for mentors. Support providers will attend training in the summer prior to residents' induction year. LAUSD will train support providers in the Formative Assessment for California Teachers (FACT), the system of assessment and support for beginning teachers. STAR training:

Support Provider Training Schedule 20 Hours Total			
Topic	Hrs	Trainer	Timeline*
Scope and Sequence of Induction Program	2	Induction coord	Summer
Lesson Study	6	Cecilia Duenas	Summer
Collaboration	6	John Matich	Summer
Tech: online observ. protocols & Blackboard communities	6	Omar Caputo	Summer
*Training will be done after hiring and the new teacher–support provider match are complete. Training will be repeated each year for new support providers. More professional development occurs during induction in the Professional Learning Community.			

Complete Master's: In summer, after earning a preliminary credential, residents will complete a master's in their selected option. While TQP 2009 provided only a curriculum and instruction option, STAR will also offer technology-based instruction or multicultural education.

Summer Semester No. 2: Complete Master's			
TBE 518: Special Topics: Using Data to Improve Instruction	3	Online	TBD
CUR 516: Seminar Curric. Devel. Math & Science	3	M&W/6 wks/4:30-7:30pm	Jun-Jul
GED 595: Complete Action Research Project			July 1
Comprehensive Exam			Aug 1
Total registered units, Summer: 6 units (Seat Time: 3 units)			

In GED 595, participants will undertake a teacher action-research inquiry project in which they plan an intervention, implement it, and measure the result on student learning. As a

complement to this in-depth capstone class, the candidates will also be in TBE 518, an online advanced technology class that will assist them in using data to improve instruction. On Aug. 1, candidates will take the master's comprehensive exam. By integrating credential and master's courses through STAR, residents will be able to complete their master's before they become first-year teachers. This should increase the percentage who earn a master's in two years.

The blended credential-master's program strengthens teacher preparation because it increases the rigor of the theoretical underpinnings of teaching, delving deeply into curriculum, and applies this in high-need schools. Residents will study educational research methods early, and in GED 595 will learn how to implement teacher action research so they will be able to use data to measure and improve student achievement beyond the capacity of most novice teachers. The participants will have a deeper understanding of the research and data that impact teaching and learning than would be the case if they received a credential without graduate coursework.

Induction Coursework: As discussed, CSUDH will develop a new induction program for STAR residents instead of moving them into LAUSD's induction program. CSUDH's special education teacher-preparation program developed an induction program which was approved. STAR is using their model to develop the single-subject induction program. STAR will provide two years of induction, in which new teachers will be coached by support providers, in most cases their residency mentor. After two years, new teachers will be recommended for the professional clear credential. CSUDH will provide advanced coursework for induction and continue the professional learning community with a track for those in the first year of induction. Also, STAR will work with LAUSD to provide assistance until the participants have met their three-year teaching requirements. In addition to improved coursework, other benefits of STAR induction are doing induction in cohorts, receiving support from the same support providers, continuing to develop as reflective practitioners, and enabling CSUDH to quickly spot and address challenges that beginning teachers encounter.

Support providers, trained by LAUSD in the FACT system of assessment and support for assisting beginning teachers, will help new teachers conduct a formative assessment to identify

their areas of strength and areas for additional study in an Individual Induction Plan. Formative assessment is an ongoing process that follows the cycle of plan, teach, reflect, apply—aligned with Lesson Study. The purpose is to improve teaching, as measured by the Calif. Standards of the Teaching Profession, in relation to state standards and performance levels for students.

CSUDH will offer four courses, two per semester, that incorporate the induction standards: K-12 Core Academic Content and Subject Specific Pedagogy; Using Technology to Support Student Learning; Supporting Equity, Diversity and Access to Core Curriculum; Creating a Supportive, Healthy Environment for Student Learning; Teaching English Learners; and Teaching Special Populations. Support providers will assist new teachers in completing tasks to demonstrate mastery of these standards, which are job-embedded. New teachers will attend 15 hours of professional growth activities in each of three goals in their Individual Induction Plan. Teachers will collect evidence of their practice in an electronic portfolio, interpret evidence, reflect on their teaching, and attend coursework and professional development that fulfill state requirements. We will continue to use Lesson Study to reflect on teaching and improve achievement. The two-year induction program has a focus and theme for each of the semesters, as shown in the tables below.

Fall Semester No. 2: Induction <i>Induction Plan & Creating Supportive Learning Environments</i>			
SPE 570: Induction Plan Development	3	Mon./15 wks/4-6:45	Aug-Dec
TED 551: Supportive Learning Environments	3	Wed./15 wks/4-6:45 pm	Aug-Dec
Total registered units, Fall: 6 units			

Spring Semester No. 2: Induction <i>Using Data to Support Achievement</i>			
SPE 571: Induction Plan Completion	3	Mon./15 wks/4-6:45	Jan-May
TED 553: Curriculum Planning, Implementation and Assessment	3	Wed./15 wks/4-6:45 pm	Jan-May
Total registered units, Spring: 6 units			

In their second year of induction, participants with their support providers will apply for a \$1,000 mini-grant to do an in-depth intervention in their classroom that will increase student achievement. They will create a multimedia presentation to disseminate their findings at the

STEM in Education Conference hosted in June by the STAR partners at CSUDH.

Support Providers: Beginning in the fall, support providers will coach the new teachers by observing them, doing lesson demonstrations, and assisting in planning standards-based lessons and units. The process will include a pre-observation conference to prepare, classroom observation, and a post-observation conference for reflection on teaching practice and feedback. Support providers will visit each teacher twice per week. Support providers are not evaluators. Their role is to guide, assist and support candidates in their initial years of teaching, which increases retention. Support providers will submit weekly logs to the STAR program of the services they provide in order to facilitate tracking and ensure support is being delivered. They will attend professional learning community meetings (see below). Support providers will receive a stipend of [REDACTED] per year.

Faculty: The CSUDH induction coordinator, 25% release time; residency coordinator, 50% release time; PLC & PD Academy coordinator, 50% release time; CSUDH faculty who will co-teach the induction courses with a support provider; and the project manager, 50% release time, will collaborate to monitor the STAR teachers' progress through the induction program. They will conduct classroom visits monthly or more frequently if necessary, will meet with STAR teachers and support providers to discuss induction plans, and share STAR teacher updates with partner school administrators. Also, CSUDH faculty will attend meetings related to the induction program and PD academy workshops that will be held at partner schools.

Additional Induction Support: During the first week of teaching, STAR staff and faculty will be at STAR partner schools all day to support the new STAR teachers. The STAR representatives will help teachers with, e.g., over-enrolled classes, taking attendance. This ensures that STAR teachers have a successful first day and week of teaching, which helps support long-term retention. In addition, when a struggling STAR teacher asks for assistance or is identified by the school, support provider or other teachers, the STAR coordinator of induction will conduct classroom observations and design a plan for a STAR team to deliver the level of support needed. Another source of support for new STAR math or science teachers will be

Noyce Scholars or MSTI Scholars (undergraduates with backgrounds in math or science in state-funded program to increase math-science teachers) assigned to their classrooms as teacher assistants, who will help with, e.g., classroom management, one-on-one and small-group tutoring, to foster success and retention. TAs from MSTI will be paid by the MSTI grant. For their scholarships, Noyce Scholars are required to do classroom participation such as this.

Professional Learning Community Continues: Support providers and beginning teachers will be members of the PLC tracks during two years of induction. They will continue to attend one in-person and one online meeting for seven months from Sept. to May, excluding Dec. and Apr. PLC members will reflectively look at data and student achievement. Through this process, new teachers will feel supported, learn from each other, build community and grow.

PLC First-Year Induction Speaker Topics: Gathering student achievement data, physical science master lesson, Algebra I master lesson, literacy master lesson, differentiating instruction, universal design, SDAIE. In the second year of induction, STAR teachers will be invited to PLC and PD Academy workshops, or they can earn a technology certificate to broaden their skills.

Goal 3. Students of participants in STAR outperform students of nonparticipating math and science teachers—matched by experience—in comparison secondary schools in LAUSD that do not have recent graduates of the CSUDH credential programs.

- a. On the Smarter Balanced math tests and NGSS-aligned science assessments to be developed for use in California, students of participating teachers will score higher than students of comparison teachers.
- b. On the California High School Exit Exam, 10th-grade students who have been taught by participating teachers will have first-time pass rates on the math component that exceed those for students of comparison-group teachers.
- c. In California’s Early Assessment Program, higher percentages of 11th-grade students who have been taught by participating teachers will score as “ready for college” or “ready for college—conditional” on the summative high school math component versus students of comparison-group teachers.

Goal 3 Activities

The rigorous preparation, considerable field experience in high-need schools and lab school, and high level of support for STAR residents will increase student achievement as described in goal 3 and its objectives. The plan to capture results for students of STAR teachers over time and compare them to the achievement results for students of comparison teachers is described in our evaluation plan. To help us measure Goal 3 objectives, LAUSD will provide student-level data files, including standardized tests, high school exit exam and Early Assessment Program, for individual students taught by teachers in the project and for students of comparison teachers who are not in STAR. Student data will be disaggregated by subgroups. School-level data for target schools and demographically matched schools are available online from the California Department of Education's Dataquest website and LAUSD's School Report Card. Data analyses will enable STAR to assess its impact and to continuously improve.

Goal 4. CSUDH and LAUSD will develop and sustain the project's partnerships and institutionalize its reforms.

- a. Successful strategies developed in the project will be incorporated into all CSUDH special-education, single- and multiple-subject credential programs by year 4 of the project.
- b. Successful technology training for teacher candidates will be incorporated into all CSUDH credential programs—special education, single subject and multiple subject—by year 3
- c. The induction program will be institutionalized in CSUDH with assistance from LAUSD by year 2 of the project.
- e. Lab school will be established in one target high school by end of year 1.
- f. Beginning in year 2, the project will develop an online repository of lessons, materials, video cases, etc. for teacher training that will be assembled throughout the project and used in teacher training during and beyond the grant period.

Goal 4 Activities

Incorporation of Successful Strategies: The training provided to CSUDH faculty in technology, English learner strategies, differentiation and accommodation, literacy in the content

areas and lesson study will be incorporated into curriculum in all our teacher training programs: multiple-subject, single-subject, special ed. New strategies will be incorporated into subject matter pedagogy classes. All literacy courses employ new disciplinary literacy strategies. All language acquisition courses will include contemporary strategies in sheltered content. Signature assignments will be modified so that candidates demonstrate their ability to use the strategies.

Institutionalization and Sustainability: After the end of the grant, CSUDH will support cohort 3 for the final year of induction. CSUDH will sustain its new induction program through extended education. This option has two benefits to teachers: 1) complete the much simpler extended education application rather than formally applying to CSUDH and the credential program. 2) pay per-unit tuition (\$300/unit) for the four-course induction program, which is much lower than part-time or full-time tuition. They will pay tuition using their salaries or financial aid. CSUDH will use the tuition and fees to provide induction courses off campus at a convenient location in LAUSD and to pay support providers. Other teachers who complete CSUDH teacher credential programs will be able to join the new CSUDH induction program.

Lab Schools: CSUDH will collaborate with LAUSD, Gage and Bell school administrators to develop a plan to continue to offer the lab school after the grant. Possibilities are: 1) offer the Gage lab school via its summer school program, Saturday program, and during the school year; offer Bell lab school throughout the year or during its intersessions (year-round school). Both schools will have a cadre of expert STEM teachers to mentor teacher candidates from CSUDH's teacher preparation program to conduct the required clinical experiences; 2) identify a cadre of teachers from other high-need schools in LAUSD and train them in developing and teaching project-based STEM at the Gage or Bell lab school. Candidates from CSUDH's teacher preparation program will be assigned to trained teachers at the selected schools and instructional teams formed to carry out the functions of the STAR Lab School. 3) collaborate with other LEAs in CSUDH's service area to implement similar lab schools and have a much wider impact.

Online Training Tools: As described in Goal 1, STAR will build a database of interactive video cases that will be incorporated into coursework throughout CSUDH's teacher education

programs and will be disseminated widely via a website. Lessons learned from the development of the online professional learning community will be incorporated into similar projects.

Technology Certificates: CSUDH will continue to offer the two technology certificates in its credential programs and through low-cost extended education for all L.A. County teachers.

Dissemination: In Years 2-5, CSUDH will host a STAR-STEM in Education Conference to disseminate the project's progress toward its goals, lab school best practices, promising practices by mentors and residents, and promising practices by STAR teachers (years 3-5). The conference will also serve as a professional development opportunity for STAR, LAUSD and CSUDH educators. Additional dissemination will occur through papers and publications by CSUDH faculty, some co-authored with partner schools' faculty. Thus, effective teacher recruitment, preparation and retention practices will be transferred to other educational entities.

(iv) Collaboration of appropriate partners for maximizing effectiveness.

STAR enjoys the involvement and support of appropriate partners, which will ensure the project's success. Their commitment is shown in letters of support.

In addition to the CSUDH College of Education, the collaboration includes the College of Arts & Humanities and the College of Natural and Behavioral Sciences. Their responsibilities are to collaborate with the residency coordinator, PLC and PD Academy coordinator, and mentors to offer content support for STAR residents; develop master lessons with a focus on integrating reading and writing in math and science; attend or lead PD Academy workshops; assist in training mentors and support providers; and help redesign STAR methods courses to add content literacy and enhance the residents' content knowledge.

CSUDH's admissions and financial aid offices will expedite enrollment and assist in accessing financial aid. CSUDH's Noyce Scholars program will recruit, advise and prepare students to earn science or math degrees so they are prepared to join STAR. The MSTI program will provide prep courses for required state tests, and MSTI and Noyce Scholars will be teaching assistants (at no cost to STAR) in the classrooms of new STAR teachers.

LAUSD has agreed to hire qualified graduates of STAR. LAUSD has designated a STAR

liaison who will be part of the project team to oversee the project, as well as on the selection committee, to ensure residents have the skills and background appropriate for their schools. The liaison also will collaborate with CSUDH on recruitment.

Troops to Teachers will collaborate with STAR to recruit qualified veterans who are interested in becoming teachers. EnCorps will collaborate with STAR to recruit and identify mid-career professionals who are interested in becoming math or science teachers. A team from the Lawrence Hall of Science will conduct a review of the methods courses, induction courses and lab school STEM curriculum, and recommend enhancements to instructional experiences. They will also do presentations through the PD Academy.

(v) Resources to operate beyond grant, financial & operating, commitment of partners

The top leadership of all partners supports institutionalization of the comprehensive changes STAR will produce in the CSUDH's credential programs, new teacher support programs, PD activities, partnerships with LAUSD, Troops to Teachers, EnCorps, Bechtel and Packard Foundation, and collaboration between COE, CNBS, and CAH, which is reflected in the support letters. CSUDH will support STAR through: 1) Savings due to duration: a) cred. and masters in 15 months (4 sem.) vs. traditional program (6 sem.). Tuition of 6 sem.: $\$3,685 \times 6 = \$22,210$; 4 sem.: $\$14,740$; savings: $\$7,470$; b) tuition savings through extended education (EE): 0-6 units = $\$2,269$ (COE) vs. $\$1,995$ (EE). 2) Tuition revenue (15 candidates cover cost of program, goal of 30 per cohort): $15 \times \$3,685$ per sem. = $\$55,275$; COE's course cost: 15 units \times $\$3,700$ (avg. cost) = $\$55,500$. Will expand STAR to add humanities candidates. 3) Revenue from technology certificates, PD Academy workshops, and induction program through EE cost per candidate: 12 units \times $\$310$ per unit = $\$3,720 + \270 (fees) = $\$3,990$; EE's cost: $\$3,700 \times 12$ units = $\$44,400$; cost for 15 students: $\$3,990 \times 11 = \$43,890$ (11 teachers cover EE's cost, goal of 30). 4) CSU funds through MSTI (up to $\$100,000$) and TRP (up to $\$75,000$). 5) Financial aid, TEACH grant ($\$4,000$ per year), MSTI stipend, and COE scholarships. 6) LAUSD training of support providers to support STAR teachers. 7) Funds from CSU partners: Bechtel, Packard Foundation, etc.

C. QUALITY OF THE MANAGEMENT PLAN

(i) Achieve objectives on time and within budget; responsibilities, timelines, and milestones.

CSUDH will be the lead applicant and fiscal agent. CSUDH and LAUSD will formalize their partnership with MOUs documenting roles and responsibilities. The management structure will facilitate day-to-day operational effectiveness and provide a means for all partners to give input and guidance into operations and management. This structure ensures that STAR will achieve its objectives on time and within budget. A coordinating council will be formed to work with the PI and project coordinators to monitor progress, plan long-range implementation and institutionalize activities. The coordinating council will consist of the project manager; project coordinator; coordinators of the induction, professional learning community, residency, and technology components; College of Education assessment coordinator; faculty representatives and deans from the Colleges of Arts & Humanities and Natural and Behavioral Sciences; MSTI and Noyce liaisons; LAUSD liaison; 2 lab school principals; 2 teacher representatives; district induction director, and HR reps from LAUSD. The group will meet every other month.

The STAR project manager has fiscal and administrative responsibility and will supervise STAR personnel. He will meet regularly with project coordinators and report to the coordinating council. The project coordinators, staff and district liaisons will form the project operations team which will meet weekly with the project manager. The management structure will ensure that responsibilities and accountability are clearly defined, and will guarantee that financial and human resources are efficiently allocated toward STAR objectives.

Project Timeline

Activity	Primary Responsible Staff	Timeframe
Year 1 2014-2015		
Project Team begins meetings	STAR Operations Team: Proj manager, coords, district liaisons	Oct 14: weekly Aug-Oct & Apr-Jun,
Train STAR staff	Proj mgr	By Oct 2014
Approve new curricula	Proj mgr, coords. & COE faculty	Oct 14-Mar 15
Train COE faculty in Web 2.0 tech	Tech coord	Oct 14-May 15
Develop online component of PLC	Tech coord	Oct 14-May 15
Develop <i>esupervision</i>	Tech coord & <i>TaskStream</i> Coord	Oct 14-May 15
Recruit lab school students	Proj. cords & lab school team	Oct 14-Jan 15

Activity	Primary Responsible Staff	Timeframe
Coordinating council begins mtgs.	Proj mgr convenes	Nov 14, quarterly
Recruit recent grads, career-changers, & pre-recruit Noyce	Recruit coord, prog cords, district HR	Nov 14, year-round
Offer CSET prep (3x/yr)	Prog. & recruit. Coord.	Nov 14, ongoing
Information meetings 15/year	Proj coords & recruit coord	Nov 14, year-round
Screening & interviews	Selection committee	Nov 14, monthly
Meetings to select 35+ particip/yr	Selection committee	Nov 14, monthly
Identify and select mentor teachers and lab school lead teachers	Proj mgr, proj coords, principals, lab school team	Nov 14–Jan 15
Train lab school lead teachers	Proj coords & lab school team	Nov 14–Jan 15
Begin summer lab schools	Lab school team & district team	Feb 15, ongoing
Begin monthly seminars	Prog. Coords, LAUSD liaisons	Feb 15–May 15
80 hours observation bf admission	Proj coords & lab school team	Feb 15–May 15
Train mentor teachers	PLC coord	Feb 15–May 15
Credential prog. admits at least 35	Proj., recruit., & appl. Coord	May 1, 2015
Orientation for selected applicants	Proj coords, recruit coord	May 15, 2015
Summer Academy for 35	Proj coords, STAR staff, faculty	Jun – Aug 2015
Coord placement of residents	Proj coords & district liaisons,	Jun 2015 – Aug 2015
Tour partner schools	Proj. coords, dist liaisons & adm.	June 15– July 15
Surveys after summer, fall and spring semesters	Eval team	Aug 2015, Dec 2015, Jun 2016
Review of intermed. & annual outcomes; prog. improvement plng	Proj mgr, eval team, proj coords	1 month after surveys
Mentors matched with residents	Proj coords & district liaisons	July 2015
35 candidates begin residency & internships	Proj mgr, proj cords, STAR staff, district reps, CNBS faculty	Aug 2015
Mentoring for residents	Proj coords, PLC coord, district	Aug 2015 – Jun 2016
Activities above repeat annually on same schedule except for curriculum development. Activities beginning in Year 2 (2015-2016) :		
Prof. Learning Community meets 2x mo (1x in person, 1x online)	Proj coords, PLC coord, district admin, mentors, liaisons	Sep–Nov; Jan–Mar; May
PD for single subject faculty & mentors re content literacy, EL	Proj mgr, proj coords, Arts & Hum faculty, Sch of Ed faculty	Sept 2015–Jan 2016
Dev. and approve induction prog.	Proj mgr, induct. Coord, faculty	Sept 2015–May 2016
Record demo lessons at lab school. Record videos of best practice.	Proj mgr, tech coord, Arts & Hum, sci & math faculty, district	May 2015, ongoing
Build interactive video database	Proj coords. & tech coord	May 2015, ongoing
Coordinate hiring placement	Proj placement coords, LAUSD	Apr – Aug 2016
At least 33 earn prelim credentials	Proj coords & credential analyst	Jun 2016
Begin comps prep	GED academic support	June–July 2016
Monitor applications & hiring	Proj cords, recruit & place coord	Jun – July 2016
At least 33 complete MA	Proj coord., GED supp. & Chair	Aug 2016
Activities above repeat annually on same schedule. Activities beginning in Year 3 (2016-17) :		
At least 33 hired as teachers in	Placproj coorement coords,	Aug. 2016

Activity	Primary Responsible Staff	Timeframe
high-need partners schools	LAUSD HR	
Identify & train support providers	Proj coords, residency coord, induc dir, district liaisons	May-July 2016
Match support providers with beginning teachers	Proj coords, residency coord, induc dir, district liaisons	June 2016
STAR STEM-in-Education Dissemination conference	Proj mgr, proj coords, induct coord, PLC coord, tech coord	Begin June 2017, yearly
Begin induction program	Induction coord, proj coords, district liaisons	Sept. 2016
New PLC track for support providers & beginning teachers	Induc coord, PLC coord, district liaisons	Begin Sept 2016-ongoing
PD for single subject faculty and support providers in Lesson Study	Proj coords, induction coord, arts and sciences faculty	Begin in Sept 2016-monthly
Tech training integrated into all credential programs	Tech coord, proj mgr, proj coords	Jan 2017-May 2017
Activities beginning in Year 4 (2017-18):		
Teacher action research mini-grants to second year teachers in induction	Induc coord & PLC coord, district liaisons	Sep -Dec 2017
Conclude recruitment	Proj mgr, recruit. coord.	May 2018
Cohort 1 receives clear credential	Coord of induct, BTSA/induc dir	June 2018
Activities beginning in Year 5 (2018-2019):		
Induction program institutionalized through CSUDH	Proj mgr, coord ind, induc dir	May 2019
Dissemination of final results	Eval team, proj mgr	May 2019

(ii) The qualifications, including relevant training and experience, of key project personnel.

Project Manager and PI: Dr. Kamal Hamdan (50%). Responsibilities: fiscal & admin management; hire, supervise, evaluate staff; coordinate evaluation; organize training; dissemination. Qualifications: Experience directing large government grants, including four Transition to Teaching, Teacher Quality Program, NSF Master Teaching Fellows, Math Science Teacher Initiative (state), and two NSF Noyce Scholarship grants. He is a career-changer, from engineer to award-winning math teacher at a high-need LAUSD school to university professor.

Program Coordinator: [REDACTED] (100%). Responsibilities: day-to-day operations and office management; assist in recruitment, screening and placement; assist with admission, registration, financial aid, credential applications; manage databases. Qual: Project coordinator on three federally funded projects: Master Teacher Fellows (NSF), Title V, and TQP.

Residency Coordinator: Dr. [REDACTED] (50%). Responsibilities: assist in selection of

residents; place & support residents; guide & supervise clinical experiences; train mentors; participate in lab schools. Qualifications: Professor in teacher education and graduate education in CSUDH College of Education. Teaches student teaching seminar and language learning courses; expert in her field. She was residency coordinator for TQP 2009 project.

Coordinator of Professional Learning Community & Professional Development

Academy: Dr. [REDACTED] (50%). Responsibilities: plan and lead PLC & PD Academy; assist in selection of residents; train teacher education faculty, mentors, support providers on collaboration and using data; assist in providing residency support. Qualifications: CSUDH professor in teacher education and graduate education. Expert in multicultural education. Facilitated the PLC meetings & seminars for TQP 2009 for 3+ years.

Assessment Coordinator: Dr. [REDACTED] (25%). Responsibilities: collect performance & exit survey data; assist with data analysis & reports. Qualif.: Statistics, research design and evaluation. On College of Education eval. committee; leads COE Assessment Center.

Coordinator of Induction: Dr. [REDACTED] (25%): Resp: lead development of induction courses; coordinate induction; plan training for mentors & support providers in cognitive coaching and lesson study; liaise with LAUSD induction director & support providers. Qualif: Acting dean of College of Education; former chair of single subject & multiple subject programs; expertise leading PD, co-teaching, secondary reading and integrating literacy into subjects.

Faculty in Colleges of Arts & Humanities and Natural and Behavioral Sciences (25%): Dr. [REDACTED] (Life Science), Dr. [REDACTED] (Chemistry), Dr. [REDACTED] (Earth Science), Dr. [REDACTED] (Mathematics); TBD: 1 physics, 1 math, 1 College of Arts & Humanities. Resp: offer content support, develop math & science master lessons that integrate reading & writing, attend or lead PD Academy workshops, assist in training mentors and support providers, add literacy focus to methods courses. Qualif: Published experts in their fields.

Other Faculty in College of Education: Special education expert Dr. [REDACTED] (25%), professor special education. Graduate education support Dr. [REDACTED] (25%), professor graduate education. Science education expert [REDACTED] (25%), CSUDH lecturer and

LAUSD South teaching and learning coordinator. Math education expert [REDACTED] (25%), CSUDH lecturer and LAUSD South math coach.

District Liaison: [REDACTED] (50%). Responsibilities: assist in recruitment, selection, and placement of residents; assist with selection of mentors and support providers. Qualif.: LAUSD Talent Acquisition Specialist Human Resources, and former science teacher.

Coordinator of Technology: [REDACTED] (50%). Responsibilities: train faculty, mentors and support providers in web 2.0 tools; support faculty & STAR teachers in integrating tech into instruction; develop and monitor technology certificates; develop online communication for PLC. Qualifications: CSUDH technology integration strategist; fully certified Apple, Google, Adobe, Cisco. Expertise in use of smart classroom; experience presenting on instructional tech.

STAR Lab School Academic Coordinators: [REDACTED] and [REDACTED] (both 20% school yr; 50% summer). Resp: assist in selection and training of lab school lead teachers; orientation and training for residents; collaborate with lead teachers on projects and lesson plans; facilitate parent workshops. Qualif: Borden: Math teacher and department chair at Gage MS; Avila: Science coach at Gage MS; experts in project based learning, Common Core, NGSS.

STAR Lab School Lead Teachers: TBD (20%). Responsibilities: help develop STEM curriculum, lead instructional teams, conduct demonstration lessons, lead reflective discussion. Qualifications: Expert STEM teachers with 5+ years experience in high need secondary school.

STAR Lab School Administrators: [REDACTED] and 1 to be hired (both 20% school yr; 50% summer). Resp: collaborate with site administrators to recruit and select students; help ensure implementation of lab school. Qualif: LAUSD specialist and former counselor.

Other project staff: **Recruitment, Selection, Placement, and Internship Coordinator** [REDACTED] (100%); **Application & Admissions Coordinator** [REDACTED] (50%); **Registration and Course Support Coordinator** [REDACTED] (50%); **Financial Manager** [REDACTED] (50%). All have experience in similar roles on federal grant projects.

(iii) Performance feedback and continuous improvement are integral to design of project.

The PI will meet with the project team weekly and every other month with the coordinating

council to discuss progress and challenges, so that any issues are addressed early with a clear course of action. The PI will make quarterly reports to the coordinating council to provide continuous feedback on residents. The project team will use evaluation data to assess progress toward objectives. Data and surveys for continuous improvement will be gathered and assessed regularly, plus feedback through observations, interviews and focus groups with residents, school and district personnel and CSUDH faculty. STAR staff and evaluators will consider which changes should be made immediately and which for the following cohort. Each summer, the STAR team will formally assess the project's effectiveness and recommend improvements.

To ensure institutionalization and dissemination, the project manager will report monthly to the College of Education cabinet and evaluation committee. The project coordinators will present to the faculty of the Teacher and Graduation Education Divisions monthly and the COE curriculum committee each semester. The coordinating council will formally report to LAUSD yearly. Review of services will focus on implementation of reforms in the Colleges of Education, Arts & Humanities, Natural and Behavioral Sciences and LAUSD and schools. The evaluators will report on the quality of services to the coordinating council and project team, which will identify mid-course corrections to ensure effective service delivery.

D. QUALITY OF THE PROJECT EVALUATION

(i) Methods of evaluation provide valid & reliable performance data on relevant outcomes.

To evaluate the implementation and outcomes of the STAR project, a comparative longitudinal mixed-method formative and summative evaluation design will be employed. The formative evaluation will collect and analyze data to track the progress of project implementation and provide feedback to the STAR project leadership for learning and improvement. The summative evaluation will address the extent to which the project goals (Table 1) are achieved, including the use of a comparative design to examine STAR teacher performance on assessments for initial teacher certification and their students' achievement. Based on the formative and summative evaluation, the final report will document the effectiveness of STAR, plus best practices, lessons learned, and next steps. Table 1 aligns goals to Performance Measures (PM),

Efficiency Measure (EM), Short-Term Performance Measures (STPM) and HEA measures.

Table 1. Summary of Goals, Objectives, and Measures

OBJECTIVES	MEASURES
Goal 1: CSUDH’s STAR project will produce highly qualified math and science teachers with skills matched to the needs of students in the high-need LAUSD.	
a. Three cohorts of 35 qualified participants will be recruited over the grant period	Tracked by STAR project staff
b. 95% of participants will complete an internship to gain applied STEM knowledge	
c. 95% of program completers will attain initial certification (PM 1, HEA i) & iii	
d. 90% of program completers will attain a master’s within 2 years of beginning program (PM 1, HEA i)	
e. 95% of participants who were not scheduled to graduate in previous reporting period will persist in the program (STPM 1)	
f. Participating CSUDH math and science teacher candidates will attain a 10% improvement over the 2013-14 average CSUDH score on the PACT, used as the baseline (PM 3, HEA i & iii)	PACT scores from College of Education
g. 90% of candidates will pass assessments demonstrating that that are meeting the needs of English learners, students with special needs, and gifted students (HEA i)	<ul style="list-style-type: none">• TPEs #5 and #7• PACT - academic language rubrics #11 and #12
h. 90% of principals who supervise participating first-year teachers will agree that they can 1) integrate technology effectively into curricula and instruction and 2) use technology effectively to collect, manage and analyze data to improve teaching & student achievement (HEA 7 i&ii)	Annual project survey
Goal 2: Residents completing STAR will be hired and remain as teachers in high-need schools	
a. 95% of program completers will be hired by LAUSD in high-need schools each year (HEA d1 & 2 & 3 & 4 &5)	Tracked by STAR project staff
b. 95% of beginning teachers will be retained in the partner high-need LAUSD one year after being hired (STPM 2, HEA ii)	
c. 90% of beginning teachers developed by the project will be retained in the high-need LAUSD three years after being hired (PM 2 & EM, HEA ii)	
Goal 3: Students of participants in STAR outperform students of non-participating math and science teachers - matched by experience - in comparison secondary schools in LAUSD that do not have recent graduates of the CSUDH credential programs.	
a. On the Smarter Balanced math tests and NGSS-aligned science assessments, students of participating teachers will score higher than students of comparison teachers (PM 4)	Student and teacher level data supplied by LAUSD; school level data from CA’s DoE Dataquest website and
b. On the California High School Exit Exam, 10 th grade	

Table 1. Summary of Goals, Objectives, and Measures

OBJECTIVES	MEASURES
students of participating teachers will have first-time pass rates that exceed those of comparison teachers (PM 4)	LAUSD’ School Report Card
c. On the summative high school math component in the California’s Early Assessment Program, higher percentages of 11 th grade students of participating teachers will scores as “ready for college” or “ready for college-conditional” than students of comparison teachers (PM 4)	
Goal 4: CSUDH and LAUSD will develop and sustain the project’s partnerships and institutionalize its reforms	
a. Successful strategies developed in the project will be incorporated into all CSUDH special education, single- and multiple-subject credential programs by year 4	CSUDH course syllabi will demonstrate incorporation of successful strategies.
b. Successful technology training for teacher candidates will be incorporated into all CSUDH special education, single- and multiple-subject credential programs by year 3	
c. The induction program will be institutionalized in CSUDH with assistance from LAUSD by year 2	Interview with district administrators and STAR project leadership
d. A lab school will be established in one target high school by end of year 1	
e. Beginning in year 2, the project will develop an online repository of lessons, materials, video cases, etc. for teacher training that will be assembled throughout the project and used during and beyond the grant period.	Links to online repository of materials and index to repository will demonstrate depth & breadth of materials.

(ii) Methods of evaluation are thorough, feasible, appropriate to goals, objectives, outcomes

For Goal 1, data for **Objs. a to e**, number of qualified participants recruited, internship completion and persistence, completion of initial certification and master's, are tracked by STAR project staff. **Obj. f** will be measured comparatively each year against the 2013-14 average CSUDH score on the PACT, with data supplied by the College of Education. For **Obj. g**, passing particular assessment components, will be calculated from data supplied by the College of Education. In an annual survey, for **Obj. h**, principals who supervise first-year STAR teachers will be asked to rate their effectiveness in integrating and using technology. **For Goal 2**, annual retention of program completers, will be calculated from data tracked by the STAR staff. **For Goal 3**, a QED will be employed to compare certain achievement indicators of students of STAR teachers to students of non-STAR teachers. From demographically matched schools that do not

have recent CSUDH credential graduates, a control group of non-STAR teachers, matched on experience, will be selected for each STAR cohort in their first year of teaching. For **Obj. b**, first-time passing math component of CAHSEE, will be calculated and compared for 10th grade students of STAR and control group teachers. For **Obj. c**, 11th graders who scored “ready for college” or “ready for college-conditional,” will be calculated and compared for students of STAR and control group teachers. For **Obj. a**, math and science assessments for each cohort and control group will be analyzed each year (see Table 2). Analysis of covariance (ANCOVA) will test for differences between the control and treatment groups on the achievement indicators. For the ANCOVA analysis, covariates will include the prior year’s math-science assessment. Control and treatment group demographics will be compared first to examine whether there will be a need to statistically control for these as covariates.

Table 2. QED

Year 1 (2015-16)	Year 2 (2016-17)	Year 3 (2017-18)
Cohort 1/Control Group 1	Cohort 1/Control Group 1	Cohort 1/Control Group 1
--	Cohort 2/Control Group 2	Cohort 2/Control Group 2
--	--	Cohort 3/Control Group 3

For Goal 4, Objs. a & b, course syllabi will demonstrate the incorporation of successful strategies and technology training. Interviews with district administrators and STAR leaders will indicate to what extent the induction program has been institutionalized by year 2 and the lab school has been established by the end of year 1 (**Obj. c and d**). STAR staff will track the development and links to the online repository of lessons, materials, video cases, etc. (**Obj. e**).

(iii) Evaluation provide performance feedback & permit periodic assessment of progress.

The formative evaluation will collect and analyze data to track the progress of project implementation, participant demographics/background and progress from enrollment through 3+ years of employment. Formative data will examine, and triangulate where possible, stakeholder perspectives and satisfaction with the project components, project strengths & challenges, suggestions for improvement, fidelity to program design, and provide feedback to the STAR team for learning and improvement. In the end, the formative results will be used to link project

implementation to project outcomes. Data sources include project leadership & staff regarding every program component and, as relevant, key university, district, school admin & faculty; mentors; STAR residents. Data collection will consist of surveys, focus groups or interviews and may include observations of some activities, e.g., STEM conference and lab school.

Participants in their first year of residency will be surveyed at orientation, after summer lab school and coursework, mid-year and year-end. During their first year of teaching, they will be surveyed at mid-year and year-end; thereafter at year-end. This will allow the program staff to closely follow participants' progress and make program changes as need. Mentors in their first year will be surveyed after their training and at mid-year and year-end; thereafter at year-end. Focus groups will be conducted if there is a need to collect more in-depth information from residents or mentors. Other stakeholders will be surveyed or interviewed at year-end.

Reporting and Feedback: The evaluators will closely collaborate with the STAR team to implement the evaluation, including finalizing the design, data collection plan, analysis and reporting. Staff & evaluators will have ongoing communication, face-to-face, phone, electronic.

The evaluators will provide regular feedback to project staff, with more detailed feedback and discussion of findings at mid-year and in annual and final reports. Also, the data collected for the formative and summative evaluation will respond directly to the TQP GPRA measures and evaluation requirements in section 204(a), as demonstrated in Table 1.

External Evaluator: [REDACTED] Ph.D., has conducted applied research for 20 years in education and has extensive experience with pre-service and in-service teacher development, as well as preK-12 intervention and educational reform. For the last five years, she has evaluated five federally funded CSUDH teacher professional development and alternative-credential programs. She completed her masters and Ph.D. in education at the University of Southern California, specializing in program evaluation and research. As senior researcher at Vital Research, she directs projects and is responsible for research design, instrument development, data collection mgmt., qualitative & quantitative data analysis & reporting.